

## GOAL 1

*Direct future growth to lands that are intrinsically most suitable for development and encourage conservation and protection of environmentally sensitive lands by using the relative wildlife habitat value of land as a basis for development decisions on Big Pine Key and No Name Key.*

### Current Conditions Summary

The Habitat Conservation Plan as implemented under the anticipated Incidental Take Permit (ITP) will create a direct link between wildlife habitat conservation and land development for the next twenty years. The direct link mechanism is the Harvest (measured in H-units) of individual parcels within the planning area. The HCP document explains how the H-unit was developed based upon the Population Viability Analysis (PVA) of the Key deer. The PVA revealed that both “harvest” (mortality) and the deer carrying capacity of the habitat (known as “K”) affect the population viability of the deer. The model further revealed that when a parcel is developed, the corresponding increase in harvest potential (additional traffic mortality) is a much better indicator than the corresponding removal of habitat as to the projected viability of the deer population over the 100-year PVA horizon. In fact, harvest turned out to be a very good indicator of development impacts when multiple development scenarios were processed through the PVA model. Therefore, the weighted Harvest Grid Map generated from the PVA will be used to predict the projected levels of take of endangered species for various development scenarios. Monroe County applied this map towards the planning of future development for the next twenty years through the LCP process.

A mechanism for translating the Harvest Grid Map into a land use regulatory tool exists under the county’s Smart Growth Initiative, otherwise known as the Tier System. Policy 105.2.1 defines the Tier System categories in detail. The three Tier categories are based on environmental protection and future land use planning priorities. Tier I lands are termed “Natural Area,” Tier II lands are called “Transition and Sprawl Reduction Area” and Tier III lands are the “Infill Area.” For Big Pine Key and No Name Key the habitat sensitivity information presented in the HCP can be used directly to define the environmental protection priorities incorporated into their Tier Map coverages. Planning priorities set during the LCP/HCP process can be used to refine the map where needed.

The same spatial model of the PVA that generates the Harvest Grid Map allows calculation of H-unit by individual parcel using a summing method applied to the grids contained within the parcel. Therefore, Monroe County will use this calculation to project the level of impact of each individual development proposal on endangered species and, ultimately, on ITP/HCP-compliance. The anticipated Incidental Take Permit will authorize a total take of approximately

78 female Key deer (PVA-model based number) and no take of the Lower Keys Marsh Rabbit in the twenty-year period covered by the permit. This is expressed in terms of development within the HCP as a total allowable H of 1.1 units. Furthermore, the anticipated ITP will require mitigation through the acquisition and protection of at least 3.3 total H units (mitigation ratio of 3 to 1). The projected amount of development that could be accommodated by 1.1 units of H was estimated as the equivalent of approximately 600 residential units. This was done by running the PVA model through several scenarios in which the least valuable habitat was always developed first. The scenarios used equivalent units that were characterized as single family residential units within subdivisions. A method was needed for the direct translation of equivalent units into all types of land uses anticipated by the LCP process such as commercial, public facilities, and roadways. The HCP does this by supplying a multiplier for those uses generating additional traffic (translating to harvest impact) beyond that generated by a single family residential unit.

### **Analysis of Community Needs**

#### Tier Map

The Tier Map for Big Pine Key and No Name Key has been developed based on relative wildlife habitat quality as defined in the HCP. Monroe County is in the process of developing the Tier Maps pursuant to county-wide Smart Growth Initiatives adopted in Goal 105 of the Comprehensive Plan. For the Big Pine Key and No Name Key planning area the Tier Maps are based upon habitat sensitivity identified in the HCP, primarily as represented on the weighted Harvest Grid Map.

#### H unit Tracking System

Pursuant to the anticipated ITP and the HCP, the H-Value of all parcels developed and parcels acquired for the purpose of mitigating endangered species take will need to be continuously compiled and monitored. A system for tracking the H for each parcel developed, and how much H is in the mitigation bank must be created and monitored. An annual report will be presented detailing this information.

## **Recommended Strategies and Actions**

### **Strategy 1.1**

Create a Tier Map for the planning area depicting the locations of Tier I, Tier II and Tier III lands as described in Comprehensive Plan Policy 105.2.1. Base the Tier Map on the habitat needs of federally endangered resident species in the planning area as set forth in the anticipated ITP and HCP in terms of relative H of parcels within the planning area.

### **Strategy 1.2**

Assign relative H units to all parcels within the planning area as per the method described in the HCP in order to ensure compliance with the permitted level of take of federally endangered species contained in the anticipated ITP.

*Action Item 1.2.1:* Use the parcel-specific H unit spreadsheet included with the HCP to assign H to individual parcels within the planning area.

*Action Item 1.2.2:* For development proposal applications involving multiple parcels, sum the H units for the individual parcels to generate the total H impact of the development.

*Action Item 1.2.3:* Devise a trip generation equivalency system to account for the difference in harvest impact between non-residential and residential uses in accordance with HCP requirements. Use the revised version of HCP Table shown below in Table 2.1. This revision provides more detail regarding the uses that are anticipated in this Master Plan.

<b>Table 2.1 H multiplier for land use development (both new and expansion) categories.</b>		
<b>Land Use</b>	<b>Average Daily Trip Generation <sup>2</sup></b>	<b>H Multiplier <sup>1</sup></b>
Residential (any type)	9.5	1
Accessory Uses <sup>3</sup> (on vacant parcels)	--	0.2
(includes neighborhood pocket parks)		
Retail and Service	70.0	7.4 (per 1,000 sq. ft.)
Office – government or private	5.9	0.6 (per 1,000 sq. ft.)
Institutional (includes community and religious organizations)	13.0	1.4 (per 1,000 sq. ft.)
Industrial (includes public utilities)	5.0	0.5 (per 1,000 sq. ft.)
Recreational (major parks) and Library	67	7.0
Source: Habitat Conservation Plan for Florida Key Deer		

<sup>1</sup> The multiplier is based on traffic generation because vehicle collisions with Key deer is the most important human-related cause of mortality for the Key deer.

<sup>2</sup> Average daily trips generation was estimated from the Institute of Traffic Engineers Manual; daily trip generation by land use has not been verified for the Florida Keys.

<sup>3</sup> Fences and auxiliary uses, as defined in the Monroe County Land Development Regulations, are assumed to cause no additional traffic impacts; they were assumed to cause habitat loss (change in K), which has a lesser effect on the matrix model than changes in H.

*Action Item 1.2.4:* Use the formulas in Table 2.2 of this Plan, (Table 2.6 of the HCP) to determine the H impact of development permitted after March 15, 1995.

### Strategy 1.3

Prepare a public acquisition strategy to acquire parcels with the highest H first because of their relative habitat value, to maximize mitigation potential and ensure compliance with the anticipated ITP/HCP.

*Action Item 1.3.1:* Prioritize the purchase of Tier I lands over Tier II and Tier III lands in order to achieve the highest possible level of H protection and to ensure compliance with the anticipated ITP mitigation requirements. Within Tier I, Florida Key deer movement corridors, as depicted in the HCP document shall be further prioritized for acquisition.

*Action Item 1.3.2:* Consider the following acquisition mechanisms applied within the planning area as eligible to be counted for the purpose of providing H unit equivalent mitigation:

Table 2.2 Calculation of H impact for different development activities.			
Type of Parcel	Type of Development	H Calculation	Description
Undeveloped	Residential Construction (single family)	$H_{\text{impact}} = H_{\text{parcel}}$	Construction on vacant parcels incurs a new impact, both as loss of habitat and as causing secondary effects.
	Non-residential construction	$H_{\text{impact}} = H_{\text{parcel}} * \# \text{ development units} * M_{\text{land use}}$	For non-residential land uses, the total impact is a function of both the amount and type of development. The number of development units refers to the square footage of new development divided by 1,000.
	Accessory use	$H_{\text{impact}} = H_{\text{parcel}} * 0.2$	Accessory uses only cause loss of open habitat (reduction in K); the effect of K on the model is 0.2 times the effect of H.
	Open space (passive parks)	$H_{\text{impact}} = (H_{\text{parcel}} * 0.2) * M_{\text{recreation}}$	Parcels will be revegetated with native vegetation, thus improving habitat value. Recreation use will increase secondary impacts.
Developed	Expansion	$H_{\text{impact}} = H_{\text{parcel}} * (\text{sq.ft.}_{\text{expansion}} / H_{\text{parcel}}) * M_{\text{land use}}$	In developed parcels, expansion causes an increase on the footprint of development; impact is a function of the additional footprint and the type of land use.
	Redevelopment (different use)	$H_{\text{impact}} = H_{\text{parcel}} * \{ [M * (\text{sq.ft.}_{\text{dev}} / \text{sq.ft.}_{\text{parcel}})]_{\text{new}} - [M * (\text{sq.ft.}_{\text{dev}} / \text{sq.ft.}_{\text{parcel}})]_{\text{old}} \}$	The impact is the difference between the effect of the new footprint/land use and the old footprint/land use.
	Accessory use	$H_{\text{impact}} = H_{\text{parcel}} * 0.2$	Accessory uses only cause loss of open habitat (reduction in K); the effect of K on the model is 0.2 times the effect of H.
	If parcel is already fenced	$H_{\text{parcel}}$ is multiplied by 0.8; otherwise the equations above remain unaltered.	The H grid was built without field verification of fencing.
Roads	Paving (dirt roads)	$H_{\text{impact}} = 0.03720 * \text{length of paving (in miles)}$	Calculation is based on the estimated H of one mile of paved road (H = 0.0372)
	Widening (paved roads; including U.S 1)	$H_{\text{impact}} = 0.03720 * (\text{additional width/existing width}) * \text{length (in miles)}$	
Source: Habitat Conservation Plan for Florida Key Deer			

1. Outright purchases by Monroe County for conservation purpose using county funds, state funds, grants or other outside funding sources, whether or not the property is later donated to the federal government for conservation purpose or transferred/sold to the State of Florida for conservation purpose.
2. Properties purchased for the purpose of conservation by the State of Florida which do not specifically prohibit use of the funds for mitigation purposes.
3. Lots dedicated to Monroe County to achieve points for the ROGO eligibility.

**Strategy 1.4**

Compile the H units of parcels permitted for development as permits are issued in order to allow continuous determination of the individual and cumulative H units of developed parcels. At the same time, continuously compile the H units of conservation parcels acquired for the purpose of mitigating H units developed.

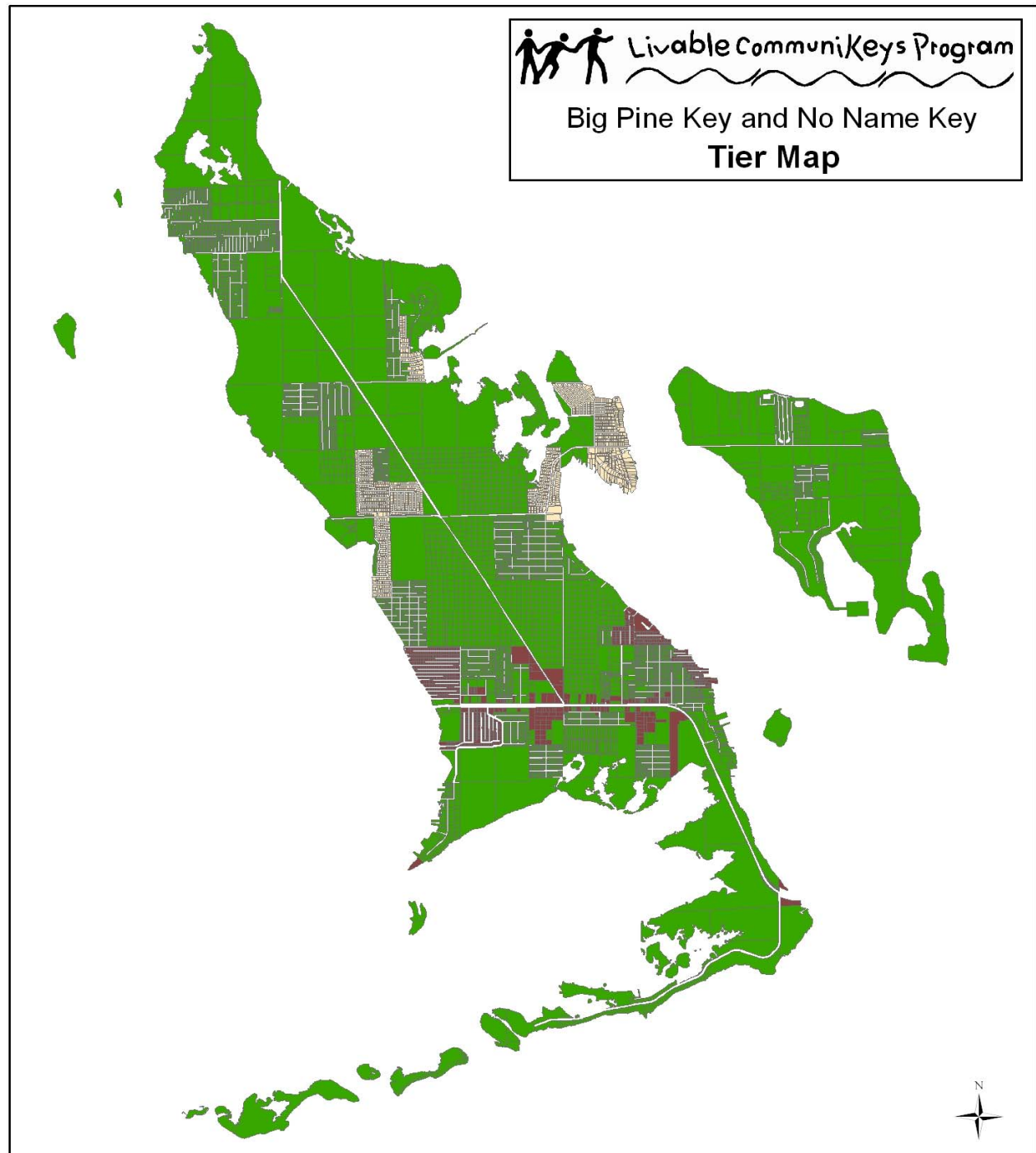
**Strategy 1.5**

Evaluate and demonstrate compliance with the total allowable H under the ITP/HCP through annual reporting of H units developed and H units acquired.

*Action Item 1.5.1:* Based on the annual report, evaluate whether there continues to be a steady and available rate of H units for meeting community needs throughout the twenty-year planning horizon.

*Action Item 1.5.2:* Based on the annual report, evaluate whether the acquisition strategy ensures a steady and available rate of H units for mitigation (through identification of future acquisition areas) throughout the twenty-year planning horizon.

*Action Item 1.5.3:* Based on the annual report, evaluate whether the program ensures that H units protected through acquisition substantially mitigates H units lost through development.



**Legend**

- Tier 1
- Tier 2
- Tier 3

Monroe County  
Planning and Environmental  
Resources Department

This map is for Monroe County Growth Management Division purposes only. The data contained herein is illustrative only and may not accurately depict boundaries, parcels, roads, right of ways, or identification information.

Figure 2.1 Tier designations on Big Pine Key and No Name Key.

## GOAL 2

*Manage future growth for the next twenty years on Big Pine Key and No Name Key consistent with the community vision, while minimizing impacts on the endangered species and maintaining the existing biodiversity.*

### Current Conditions Summary

The primary mechanisms for implementation of the Tier System are the permit allocation system and land acquisition. These two programs are already in place and need merely to be revised to implement the HCP and this Master Plan. Tiers I and II minimize development impact on natural resources and sparsely settled areas. Tier III encourages development in disturbed areas already heavily settled. It is envisioned that future development patterns will be accomplished through the application of minimum eligibility requirements for competing in the permit allocation system. Tier III applicants will be immediately eligible to compete whereas Tier I and Tier II applicants will be required to amass points via land preservation prior to being eligible for entry into the system. In this way, the competition aspect of the allocation system is preserved while the subjective evaluation of point awards (a growing problem since the system was first implemented) is eliminated. The land acquisition program, the second implementation mechanism of the Tier System, will be reviewed and revised to prioritize parcel acquisition according to Tier category.

As described in Goal 1, the distribution of future development within the planning area will be based directly on the H units of the land to achieve minimization and avoidance of impacts. The Tier category coverages were developed following this same format of habitat sensitivity information presented in the HCP, primarily as depicted on the Harvest Grid Map. Much of this information was available and was brought into the LCP process during development of the preferred land use alternative.

Land use alternatives developed in the LCP were organized by land use category according to the primary focus area identified by the community: residential, commercial, recreational/community facilities, and transportation. The alternatives analysis is presented in the Big Pine Key & No Name Key Development Alternatives Report. The alternatives considered most feasible (preferred) for the first three land use categories are identified in that report as:

- Residential Clustered,
- Commercial Redevelopment, and,
- New Community Facilities and Scattered Community Facilities (two alternatives were combined).

The transportation alternatives were further analyzed and preferred alternatives were later identified to be:



- Three-laning of U.S. 1 on Big Pine Key, and,
- Cross-island road for local traffic.

The basic desired rate of development was also set during the LCP process for the twenty-year planning horizon:

- 200 residential units, and,
- 47,800 square feet of additional commercial floor area (to correspond with residential).

The conceptual maps of the above alternatives (and all other alternatives considered) are contained in Appendix 5 of the Big Pine Key & No Name Key Development Alternatives Report.

The preferred alternatives were combined and refined into a single preferred land use alternative to which were added plans for expansion of institutional uses and planned public facilities. During development of the HCP this preferred alternative was further refined to form a specific land use plan for Big Pine and No Name Keys. This is the plan for which the proposed levels of take of federally-protected endangered species was determined through PVA modeling. Therefore, implementation of this specific plan will comply with the anticipated Incidental Take Permit. The plan components are as follows:

- Residential – Up to 200 new units over the next twenty years.
- Commercial – Up to 47,800 square feet of commercial floor area over the next twenty years in the U.S. 1 Corridor Area (south of Lytton’s Way) to be used for infill and expansion of existing businesses. Development is limited to Tier III disturbed and scarified uplands. Total trip generation over the twenty-year horizon is limited to the equivalent of 200 residential units.
- Major Recreational/Community Facilities – One major recreational and community center facility to be located at the county-owned “Mariner’s Resort” site in southeastern Big Pine Key; Three additional public parks to be located on disturbed uplands; Expansion of the existing public library by up to 5,000 square feet.
- Minor (Neighborhood) Recreational – Up to seven neighborhood “pocket parks” on disturbed or scarified sites in any of the following subdivisions:
 

Pine Channel Estates	Palm Villa	Port Pine Heights
Cahill Pines and Palms	Sands	
Doctor’s Arm	Eden Pines Colony	
- Community Organizations – Allow for expansion of existing community organizations such as religious institutions and civic clubs on scarified land already owned by them on the date of the issuance of the Incidental Take Permit.
- Public Facilities – To include the following public facilities needs anticipated over the next twenty years, all of which are to be restricted to disturbed and/or scarified areas:
  1. Sewage treatment needs outlined in the Monroe County Sanitary Wastewater Master Plan (SWMP), including facilities for collection and treatment,
  2. Stormwater treatment needs outlined in the Monroe County Stormwater Management Master Plan (SMMP) including facilities for collection and treatment,
  3. Public office space to be located in the U.S. 1 Corridor Area, and

#### 4. Expansion of county emergency response facilities at the current location.

- Accessory Lots and Fences – Approximately 250-300 vacant lots allowed to either be fenced or developed with accessory uses primarily on Tier II and Tier III lands.
- Roads – To include three-laning of U.S. Highway 1 only. The cross-island road was included in the PVA modeling effort as part of the total development impact. However, the road was subsequently withdrawn from consideration by the Board of County Commissioners (BOCC) based on planning issues identified through further study and public input. One-way access from the western area of Big Pine Key to the central business area (surrounding Key Deer Blvd.) may still be considered as well as improvements to other roadways as permitted in the HCP.

### **Analysis of Community Needs**

Reconciliation of the Tier Map, Future Land Use Map (FLUM) and Land Use District Map  
Land use within the planning area is already regulated pursuant to the Future Land Use Map (FLUM) of the Comprehensive Plan and the Land Use District Maps (a.k.a., zoning maps). The Master Plan horizon (most likely 2025) will now extend beyond the comprehensive plan horizon (2010) because it must correspond with the federal Incidental Take Permit (ITP). Therefore, any FLUM or Land Use District revisions required to implement the LCP or HCP should be included in this Master Plan. Revisions must still be consistent with the intent of the Comprehensive Plan. In addition to map revisions, the regulatory status and relationships of the FLUM, Land Use District Map and Tier System Map must be codified.

### H-unit Budget

A total of 1.1 units of H may be developed over the twenty-year planning horizon, as long as the mitigation ratio of 3:1 mandated by the HCP is maintained. The community and planning staff have formulated a general development scenario that meets community needs and complies with the HCP. In order to ensure that the desired scenario can be followed, the plan must partition H to the various planned uses, at least in the early stages. This will ensure that reserve H units are available for each planned use when it is ready to develop, promoting an orderly development process over the twenty-year horizon. The H unit budget for each land use type will ensure the fair and reasonable partitioning of development potential towards that land use type in compliance with the spatial and temporal commitments made in the HCP and pursuant to the LCP. The H unit budget will be used as a guide and is more important near the beginning of the process. The county may consider changing the H unit budget according to changing conditions within the planning area. Changes would merely redistribute H units among uses but could not result in a change that would exceed the total number of H units allowable under the anticipated ITP and HCP.

### Comprehensive Plan Consistency

Once the HCP and Master Plan for Big Pine Key are formulated and completed, inconsistencies with existing Comprehensive Plan policies must be addressed. For every policy in the Comprehensive Plan that specifically addresses Big Pine and No Name Keys the Master Plan will in some way address that policy issue. The Comprehensive Plan policies will be individually evaluated to determine whether or not they are affected by the Master Plan, and if they will be replaced or modified.

## **Recommended Strategies and Actions**

### **Strategy 2.1**

Continue to utilize the Land Use District Maps and supporting FLUM to regulate land use type, density and intensity on an individual parcel basis within the planning area. The distribution of future development shall be guided by a Tier System Overlay Map pursuant to the Comprehensive Plan Smart Growth Initiatives (Goal 105).

*Action Item 2.1.1:* Continue to recognize the FLUM categories and land use districts as the regulatory tool used for evaluating individual development proposals for compliance with land development standards such as type of use, intensity of use, and open space. This will promote orderly and safe development that is consistent with the Comprehensive Plan and will protect the integrity and conformance status of existing development.

*Action Item 2.1.2:* Adopt the Tier System Map separate from but as an overlay of the Land Use District Maps. The Tier System Overlay Map shall be used primarily to guide the distribution of development through the application of the residential rate of growth ordinance (ROGO) and the non-residential rate of growth ordinance (NROGO) pursuant to the strategies set forth in this Master Plan.

*Action Item 2.1.3:* Adopt the following parcel-specific revisions to the FLUM and Land Use District Map. These revisions are either required actions pursuant to the Comprehensive Plan or needed to facilitate the implementation of this Master Plan (see Figure 2.2):

1. Revise the Land Use District Map to remove the Area of Critical County Concern (ACCC) land use district designation from all parcels within the planning area and replace the designation with the applicable underlying FLUM category and land use district for each parcel in the planning area. Delete Policy 103.1.2 requiring this change from the Comprehensive Plan.

2. Change the designation of acreage identified as real estate parcel numbers:

00110460.000000;    00110540.000000;    00110640.000000;  
 00110720.000000;    00110720.000100;    00110730.000000;  
 00110740.000000;    00110750.000000;    00111020.000000;  
 00111020.000010;    00111020.000020;    00111020.000030; and

00111020.000040 on Big Pine Key from Mixed Use/Commercial (MC) to Residential Low (RL) on the FLUM and from Destination Resort (DR) to Suburban Residential (SR) on the land use district map. This proposed change will reduce the intensity of the existing land use district and bring it into conformity with the current use and surrounding community. Additionally it will protect existing sensitive habitat.

3. Change the designation of Lots 21 and 22, Tropic Island Ranchettes from Residential Conservation (RC) to Mixed Use/Commercial (MC) on the FLUM and from Native Area (NA) to Suburban Commercial (SC) on the land use district map. This change was a request by the property owner in order to recognize a commercial use existing before 1986 and to allow for minor expansion of the use.

4. Change the designation of acreage identified as real estate parcel numbers 00111470.000000 and 00111470.000100 from Suburban Residential (SR) to Suburban Commercial (SC) on the land use district map. Leave the existing FLUM designation of Institutional (INS) unchanged. This change was a request by the property owner in order to allow for expansion of existing community and institutional facilities.

*Action Item 2.1.4:* Create a new land use district category, Light Industrial (LI), for the purpose of providing a more appropriate definition and accommodation of existing light industrial uses on Big Pine Key. The LI category may be considered for parcels within the Mixed Use/Commercial (MC) FLUM category that do not border on U.S. Highway 1 and are currently occupied by light industrial uses such as, but not limited to construction material and lumber yards, outdoor and/or enclosed storage, warehouses and distribution centers, auto and marine services.

*Action Item 2.1.5:* Once Master Plan FLUM changes are adopted pursuant to Goal 2, Strategy 2.1, Action Item 2.1.3, consider any future changes to the FLUM to be inconsistent with the intent of the adopted Master Plan and the intent of the HCP, except that changes to the Conservation designation may be considered consistent with both plans.

## **Strategy 2.2**

Limit the total impact over 20 years to not exceed H units of 1.1.

*Action Item 2.2.1:* Create an H unit budget for the general land use types and amounts established through the LCP preferred alternative process and refined through development of the HCP.

*Action Item 2.2.2:* Use the following “H unit budget” table (Table 2.3), based on the final preferred development scenario modeled in the HCP, as a guideline for the approximate amount of H that should be anticipated for planned development over the twenty-year horizon.

*Action Item 2.2.3:* Include discussion of the H unit budget in the annual review of HCP compliance and change the budget as needed to meet community needs within HCP limits upon approval by the Board of County Commissioners.

Table 2.3. H unit budget for future development on Big Pine Key and No Name Key.			
Land Use Scenario Modeled in the HCP For Endangered Species Impacts	Unit	Proposed Units	Percentage H Estimated
Residential	Single Family House	200	23%
Residential Accessory Lots (no additional traffic impact)	Developed SFR Lot	250	5%
Commercial (new and expansion)	1,000 Square Feet	47.8	39%
Community Organizations (new and expansion)	1,000 Square Feet	10	2%
Community Park Facility	Parcel	1	6%
Library Expansion	1,000 Square Feet	5	1%
Public Offices (new and expansion)	1,000 Square Feet	10	1%
Emergency Facility Expansion	1,000 Square Feet	7	1%
US 1 Three-Laning	Mile	.25	1%
Existing Roadway Paving	Mile	5	16%
Remaining public uses (minor parks, stormwater etc.)	N/A	N/A	5%
<b>Total</b>			<b>100%</b>
Note: The percentage of H estimated is a generalized H unit value based on parcel averages and is for estimation purposes only			
Source: Habitat Conservation Plan for Florida Key Deer			

### Strategy 2.3

Revise the Future Land Use Element policies of the Comprehensive Plan regulating the Big Pine Key and No Name Key Area of Critical County Concern.

*Action Item 2.3.1:* Revise Objective 103.1 of the Comprehensive Plan to add the Master Plan and the Habitat Conservation Plan as guiding documents with which future land development regulation on Big Pine Key and No Name Key must be consistent.

*Action Item 2.3.2:* Delete the following policies under Objective 103.1 of the Comprehensive Plan: 103.1.1 and 103.1.2; 103.1.7 through 103.1.12; 103.1.14 and 103.1.15. These policies are specifically addressed in this Master Plan.

